

ABSTRACT OF THE DISCLOSURE

An automated X-ray imaging system and method for producing a plurality of X-ray imaging signals having selectively enhanced image resolutions, e.g., for magnifying the field of view and providing a display image having features not otherwise visible to an unaided human eye. Successive doses of X-ray radiation are applied to a portion of the subject to produce corresponding image signals. Such doses of X-ray radiation are controlled by controlling X-ray radiation characteristics, such as intensity, focal spot size, focal spot location, focal spot shape, or collimation, to cause a subsequent image signal to differ from a prior image signal in one or more image characteristics, such as image resolution.